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THE EXPANSION OF EUROPE IN POPULATION¹

In the federal Constitution the two sentences about apportionment and a decennial enumeration mark the origin of the national census in the modern world. This is a political device so different from the old Roman census established for purposes of taxation that in French and German the two have different names. It originated in this country in close connection with the introduction of national representative institutions and since 1787 the two have spread hand in hand. After the Spanish-American war, when the United States took charge of Porto Rico, Cuba, and the Philippines and desired the extension of local government and representative institutions in those regions, one of its first steps was the enumeration of the total population and of various classes. Still more recently, when the Empress Dowager of China promised a representative government to her people, she announced that "representation in the Provincial Deliberative Assemblies would best of all be arranged on a strict basis of population, but as China has not yet made a census and to begin one would consume too much time," other bases will be used. This was recognized as only a makeshift, and about five years ago the results of the first official Chinese attempt at a census of population were published in the government gazette.²

The modern census thus originated as a political device and has spread in close and constant association with the extension of representative institutions. But apart from its political value it has rendered great service to the scientific study of man's social life. Indeed, this side of the modern census has steadily

¹This address was delivered as the Presidential Address at the meeting of the American Economic Association held in San Francisco, August 11, 1915. It incorporates in revised form material originally published in *Studies in Philosophy and Psychology*, a commemorative volume dedicated to Professor Charles E. Garman of Amherst College (Houghton, Mifflin & Co., 1906).

²W. W. Rockhill, "The 1910 Census of the Population of China" in *T'oung-Pao*, vol. XIII (1912).

gained ground in comparison with its political importance. To some inferences derived from this field of census work I ask your attention this evening.

The title of my address has been suggested by Seeley's *Expansion of England*. The theme on one side is wider in that it covers all Europe, but on another it is much narrower in being confined to population. What I have to say may be prefaced by a reference to his familiar argument. He maintained and tried to prove that the main thread binding modern European history into unity and meaning has been a competition between the powers of western Europe, especially Spain, Portugal, Holland, France, and England, for transmarine expansion and colonial empire. The competition resulted in the failures of Spain, Portugal, and Holland and later in a mighty, century-long duel between France and England for commercial and colonial dominance in Asia and America, a duel which was interrupted for a time by the complete triumph of England under the lead of the Great Commoner. Then followed the disruption of England's vast empire through the American Revolution and a renewal of the struggle, when her main rival, France, under the guidance of Napoleon, made strenuous and persistent efforts to wrest from England what remained of her world dominion, efforts which came to a disastrous end at Waterloo. The nineteenth century saw the rise, upon the ruins of the first, of a second British Empire which now includes more than one fifth of the earth's surface and more than one fourth of its population. Were Seeley still alive he would doubtless find in the present war strong confirmation of his thesis that the history of Europe for more than four centuries has centered around the efforts of various competing powers to secure commercial expansion and colonial empire. He would perhaps have endorsed the view recently expressed by a German historian that the present is likely to be only the first of a series of great wars comparable with the century-long struggle between Rome and Carthage for commercial and colonial dominance in the Mediterranean or the yet longer rivalry between England and France.

To an American student not interested primarily in politics this interpretation of modern history, suggestive and enlightening as it is, may seem to betray a patriotic, if not an insular, bias. He may doubt whether history has a theme, whether any

single thread can guide one through its maze, or he may discern elsewhere the real thread of Ariadne. Beside this contention of Seeley's, let me put a few sentences from one of the great English statist. Sir Robert Giffen, speaking as President of the Royal Statistical Society, said:

The increase of population in the United States . . . is such as to be fairly bewildering in its probable consequences. The phenomenon is also without a precedent in history. . . . [It] is perhaps the greatest political and economic fact of the age. [It] has altered . . . the whole idea of the balance of power of the European nations. . . . The idea of a new Europe on the other side of the Atlantic affects every speculation. . . . European Governments can no longer have the notion that they are playing the first part on the stage of the world's political history. And this sense of being dwarfed will probably increase in time.³

If this statement was true more than thirty years ago, when it was made, it is certainly no less true today.

In these English writers we find two ideas at least superficially different regarding the unifying thread of modern history and present politics. The English historian finds it in the expansion of England, the English statist in the growth of the United States. Sir Robert's view seems to me the more detached and the sounder. In another passage from the same address he blends the two ideas and thus states my present theme, "The great economic phenomenon of our time" is "the creation of the United States of America and the provision by this and similar agencies for a growth of population not only in the United States but in Europe which is entirely without precedent."⁴ This theme I call the Expansion of Europe.

In order to ascertain whether an expansion has taken place some means of measurement must exist.

Europe has expanded in multiform ways, but most of them

³ Giffen, *Economic Inquiries and Studies*, vol. II, p. 22.

A similar opinion had been previously expressed by a British traveller in the United States and endorsed by Darwin in the following words: "Looking to the distant future, I do not think that the Rev. Mr. Zincke takes an exaggerated view when he says 'All other series of events—as that which resulted in the culture of mind in Greece, and that which resulted in the empire of Rome—only appear to have purpose and value when viewed in connection with, or rather as subsidiary to . . . the great stream of Anglo-Saxon emigration to the west.'" Darwin, *Descent of Man*, ch. 5. Quotation from F. Barham Zincke, *Last Winter in the United States* (1868), p. 29.

⁴ Giffen, *op. cit.*, p. 38.

are hardly susceptible of measurement. Thus the world is dominated in great and increasing degree by two systems of law, the Roman and the English, both essentially European products. Probably more than one third of the earth's population now live under one or the other of these legal systems.

Christianity, while not European in origin, has acquired many of its diverse forms and much of its impelling power of proselyting zeal in Europe and to this day the boundaries of Christianity as the prevailing form of religion are almost coincident with the boundaries of Europe and the colonies of Europe. Not far from one third also of the population of the earth is Christian.

At the time when America was discovered the number of people speaking one or another of the six main languages of Europe, French, German, Italian, Spanish, English, and Russian, was probably less than fifty million in all, or an average of ten million to each. Now these languages are used by an average of nearly 70,000,000 to each, 400,000,000 in all, or one fourth of the probable population of the earth. In like manner other aspects of European civilization, such as literature, art, science pure and applied, agriculture, and industry, might be shown to have expanded as European law, European religion, and European languages have expanded.

But these may all be regarded as secondary rather than primary phenomena, as results of the growth in the population of European stock. The increase in the number of Christians as a result of missionary effort among non-European peoples is of slight importance numerically when compared with the unparalleled increase in the population of the Christian nations. So the great extension of the leading languages of Europe is due little to the conquest of other peoples by those of European speech and the imposition of some European language upon them, as we have taught English to the Indians and the Negroes and are now teaching it to the Malays. In the expansion of Europe the primary phenomenon seems to be the increase of population, although the true relation is perhaps one of interaction rather than of cause and effect. The increase of European population no doubt has strengthened the influence of European law and religion; but, on the other hand, the civil and common law and the Christian religion, along with the science and industrial arts of Europe, have contributed to the rapid growth of its popu-

lation. Partly because population seems the primary factor but mainly because more trustworthy and exact measurements may be obtained in this field, I have still further defined the theme of my address as "The Expansion of Europe in Population."

To measure this expansion of Europe the period observed should be as long as possible. The earliest measurement deserving attention was made in 1741 by the leading statist of the eighteenth century and resulted in an estimated European population of 150,000,000. He determined the population of each country from such evidence as could be had, his results made a total of 130,000,000 and he added 20,000,000 to cover possible omissions. Twenty years later in amplifying his first study, he reduced his estimate to 130,000,000 by making no allowance for omissions. The value of his conclusion may be judged partly from his methods and partly from a comparison of his results with estimates subsequently made, but speaking for the same date and resting on better evidence. His methods for the various states differed widely. For some the number of persons reported as paying the hearth tax was multiplied by five to get the population. For others the annual number of deaths was multiplied by 36, or the annual number of christenings by 27. For one the estimated number of farms was multiplied by 20 and that product by 2; for another the annual number of recruits to the army was the starting point; for several the guess was made that the country was about as densely settled as another concerning which more was known.

Where methods were so crude the results might be thought valueless and if no means of checking or correcting them were at hand that conclusion might be the only one that was safe. But if the population of a country has been counted once, it is possible to infer from the difference between the results of enumeration and of an estimate how far the estimate departs from the truth and on which side. If the population has been counted twice or more at different dates and the rate of increase determined, it becomes possible by extending the rate backward to estimate the population before the date of the first census with an accuracy previously out of the question. By resorting to such helps the population of Europe in the middle of the eighteenth century can now be closely approximated. Following this course, I have sought to make a new estimate and to compare my figures with those under examination. The general result of the com-

parison is to prove that Süssmilch's estimates of the population in southern and western Europe were much too low. I add 5,000,000 to his population of France, 4,000,000 to that of Italy, 2,000,000 to that of the United Kingdom, 1,700,000 to that of Spain and Portugal, or a total of 12,700,000. On the other hand, his estimates for eastern Europe were much too high. I reduce his population of Poland and Lithuania by 6,000,000 and of Russia by 5,000,000. As a net result of offsetting corrections like these, I reduce his estimated population of Europe in the middle of the eighteenth century from 130,000,000 to 127,000,000.

On the eve of the present war the population of Europe was 452,000,000, showing an average annual increase through more than a century and a half of about 2,000,000. That is, since 1750 Europe has added more to its population yearly than the United States ever did in the same length of time.

Even if a thoroughgoing skeptic were to deny the value of the earlier estimates upon which I rely, he could not question the recent figures and therefore could not challenge the main conclusion that for many years the population of Europe has been increasing with unexampled rapidity. That since the twentieth century opened it has added 50,000,000 to its numbers, or about 4,000,000 each year, can be established by irrefutable evidence.

But this steady and rapid increase, it might be said, is a characteristic of all countries which have learned how to support a dense population by intensive agriculture. There are two and only two areas, China and India, which deserve in this respect to be compared with Europe. These three, excluding the thinly settled regions of western China, the peninsula of Deccan, and northern Europe, do not occupy more than one twentieth of the earth's land surface. Yet they embrace fully one half of its people. Is it true of the others, as it is of Europe, that the population has been steadily and rapidly increasing?

In the case of *China*, if the official returns are entitled to confidence, the answer must be, "Yes." The population of each province is reported annually to Peking and, for a period since the middle of the eighteenth century, the totals in nearly every year have been published. They show an increase so regular as to arouse suspicion. This was especially true throughout the century preceding the alleged Chinese census of 1842. Out of 162

cases during that period 160 show an increase, a record not to be paralleled in Europe or anywhere else except possibly in the United States. In British India, which furnishes the nearest analogy, more than one fifth of all such cases show a decrease.

This internal evidence of complete untrustworthiness is confirmed by external evidence. Before the eighteenth century the Chinese population returns were used as a basis for apportioning taxes and in consequence were probably too small. But for more than two centuries they seem not to have been used for that purpose or indeed for any other except to minister to the satisfaction of the central authorities. The leading English writer on the subject was nonplussed by an inexplicable increase of 44,000,000 in China's population in 1775 over that of 1774. But a Russian authority, with whose book apparently the Englishman was unfamiliar, tells us that in 1775 the Chinese Emperor detected negligence in the compilation and commanded a revision of the returns, whereupon the various local authorities arbitrarily augmented their figures. The total additions in that one year equalled nearly one half of the present population of the United States and apparently this water in the human stock of the Chinese Empire has remained un-reduced for nearly a century and a half. The same Russian authority thus describes the mental attitude of the local Chinese clerks who make the returns. They think: "This place is distant, the country large . . . my superior is unable to discover an error." So they omit and increase *ad libitum* until the registers become in the end wholly fictitious.

A few years ago the American Minister to China investigated the evidence for the population of that country and concluded that little reliance could be placed on the Chinese figures. That result may be regarded as now well established.⁵

Are we left, then, with no answer to the main question whether

⁵ Mr. Rockhill and I worked on the same problem, he in China with the Chinese sources and I in the United States with Russian, German, English, and American sources. On the two main points we reached substantially identical results, concluding that current estimates of the present population of China are grossly exaggerated and that the increase of that population since the middle of the eighteenth century has not been very large. Within the last ten years Mr. Rockhill's results have gained general acceptance. See W. W. Rockhill, "Inquiry into the Population of China" in *Smithsonian Report* for 1904, pp. 659-676, and "Note on the Population of China" in the *Quarterly Publications of the American Statistical Association*, XI (1908-9), pp. 357-362.

there has been an increase of Chinese population? Not quite. We are reduced to inferences from a knowledge of the factors which usually affect the growth of population. Probably in normal years there are many more births than deaths in China. But apparently an abnormal year in that country or in some large parts of it is the rule rather than the exception.

The main reason for believing that the population of China is not increasing is the great number and deadliness of natural calamities, famine, flood, and pestilence, or political calamities like civil war, which have more than decimated great sections of the population and devoured the natural increase of normal years. Thus by the overflow of the Yellow River in 1888, according to the memorial sent to the Emperor, some 2,000,000 were drowned or starved and the local correspondent of the London *Times* estimated the number of victims as 1,000,000 to 7,000,000. The losses of life in four provinces from the famine of 1877-78 were said by the China famine relief committee to amount to 9,500,000. Those from the famine of 1849 were estimated at 13,750,000 and those from the Tai-Ping rebellion were estimated at 20,000,000. These estimates of losses are those accepted by Rockhill and much larger figures are stated by other writers. No doubt in ordinary years China has a natural increase by excess of births over deaths. But there have been so many of these extraordinary years and in them the losses by death have been so heavy as to offset the increases in the other or normal years.

There is, then, a sharp contrast between China and Europe; in the former for a century or more the population has been nearly stationary, in the latter the population has been increasing with great and growing rapidity.

But Europe has had an influence far beyond its geographical boundaries. The growth of population in that continent is only one among several ways in which Europe has affected the population of the earth. Three other forms of European expansion may be distinguished, the increase among emigrants from Europe who have left that continent, the increase among native peoples who have fallen under the control of some European nation, and the increase among independent native peoples who have imitated the civilization of Europe.

To an American the most interesting of the secondary forms of European expansion is the multiplication of emigrants from

Europe in other parts of the world. Like the increase in Europe, this can best be measured by using the results of censuses or, lacking them, of estimates. Following this procedure, I have reached the conclusion that there are now living in other parts of the world not far from 127,000,000 persons of European birth or ancestry. The number of Europeans now living outside of Europe is about equal to the number of Europeans who lived within that continent in 1750. Of this great number nearly two thirds are in the United States. There are more Europeans by blood in this country than in any one country of Europe except Russia and about ten times the number in any other offshoot of Europe such as Brazil, Argentina, Canada, Australia, or Siberia. The United States is the one full-grown child of Europe.

The enormous increase of any one form of life is usually purchased at the expense of other competing forms which are displaced by the more efficient or serviceable type. Cattle and horses have displaced the buffalo and antelope; wheat, maize, and cotton have restricted the range of prairie grass and forest as the white man has of the Indian, Australian, and Malay. Does this general principle hold true of the expansion of the population of Europe beyond the bounds of that continent? Have the millions of Europeans by blood now living outside of Europe simply taken the place of those of other blood? How has this great expansion of Europe affected the growth of other stocks?

In the United States, no doubt, the Indians have decreased while the whites increased. The same has been true of the native stock in the West Indies, Australia, and many islands of the Pacific. This has happened in so many cases, especially in temperate regions, that popular opinion probably believes it to be the prevailing result of the expansion of Europe. But that is a mistaken view. On the contrary, the net result of the expansion of Europe has been an enormous increase in the aboriginal population of the lands to which they have gone. A brief review of the evidence on this point for some leading areas will show that the popular opinion to the contrary has no adequate foundations.

United States. Exaggerated estimates have often been made of the number of Indians living within the present area of the United States about 1500 A.D. These estimates have gone as high as 25,000,000, and the usual unit employed in making them has been a million persons. But not long since, a very careful study of the subject was made by different persons in the United

States Bureau of Ethnology, under the direction of Major J. W. Powell, and the conclusions reached that the number of Indians then in the present United States was "somewhere between 500,000 and 1,000,000," and that there are now in the United States "about half as many Indians as when the good queen sold her jewels." If we accept the mean of the two figures as the most probable estimate for 1500, and the enumeration at the last federal census, 265,683 as correct, this would indicate a decrease of about 500,000 Indians in four centuries.

Canada had 110,000 Indians and Eskimo in 1913, and it may fairly be doubted whether they were much more numerous on the same area in 1500. The evidence, arguments, and conclusions of the United States Bureau of Ethnology apply in the main to the northern neighbor with the additional fact that the staple food plant of the Indians, maize, did not and does not thrive in Canada.

West Indies. The Indian population of Cuba at the date of its discovery has been variously estimated at between 200,000 and 1,000,000 and that of Porto Rico at between 100,000 and 600,000.⁶ The smallest of each pair of figures is probably too large. This was clearly the opinion of Alexander von Humboldt regarding Cuba, and he is the best critical student who has examined the subject. His results are confirmed by more recent conclusions in other fields. Probably 500,000 would be much too large a figure for the entire aboriginal population of all the West Indies at the time of their discovery.

Mexico. The best source of information is Alexander von Humboldt, who passed a year in Mexico in 1803-1804, and who examined the question of population with care and critical acumen. I have found no estimate of the population of the present Mexico at the time of Cortez and believe that no materials upon which to base one are extant. But Humboldt is willing to affirm that "the whole of the vast region, which we designate by the general name of New Spain (Mexico) is much better inhabited at present than it was before the arrival of the Europeans."⁷

The evidence offered for the conclusion is the spread of agriculture in Mexico to large, fertile and well-settled districts which before the Spanish conquest were sparsely settled by pastoral or hunting tribes. The same authority concludes that the number of Indians in Mexico had been on the increase for the preceding

⁶ *Census of Cuba*, 1899, p. 65. *Census of Porto Rico*, 1899, p. 23.

⁷ *Political Essay on New Spain* (English translation), vol. I, p. 71.

fifty years, as he put it in one place, or for the preceding century, as elsewhere stated, the evidence being derived from "the registers of capitation or tribute."

At the beginning of the nineteenth century he estimated: "The number of Indians in New Spain exceeds two millions and a half, including only those who have no mixture of European or African blood."⁸ It is usual to assume that about 37 per cent of the present population of Mexico is of pure Indian blood, which would mean nearly 5,200,000 Indians,⁹ and a doubling of the pure Indian population of Mexico during the nineteenth century alone. However wide a margin of error we may ascribe to these figures, it seems to me indisputable that the increase of the pure Indian population of Mexico since 1500 has been so great as more than to offset the decrease in other parts of North America, including the West Indies. If so, the pure Indian population of North America has increased in the last four centuries.

What is true of North America holds with even greater force of South America, which contains no such vast areas as the eastern United States and Canada from which the Indians have been driven, and no areas, like the West Indies, formerly well settled in which the Indians have been exterminated. On the other hand, the processes of race mixture have gone further in South America than in North America, and it is impossible to show how much pure Indian blood remains in that continent. From various figures in the *Statesman's Year Book* and elsewhere I have estimated them as 6,700,000 and the entire number in the western hemisphere as 13,600,000. A. H. Keane reaches a much smaller figure, 9,900,000,¹⁰ and Bryce a much larger one, 16,000,000—17,000,000.¹¹ But I see no reason to believe that the number in 1500 A.D. approached 10,000,000. I conclude, therefore, that the influx of whites into America, while it may not have caused, has certainly been accompanied by, an increase of the Indians in that hemisphere.

Australasia. The migration of the European to Tasmania, Australia, and New Zealand has been attended by a decrease, and

⁸ *Op. cit.*, p. 98.

⁹ Bryce estimates 8,000,000 Indians, excluding mixed bloods in Mexico (*South America*, p. 458).

¹⁰ Mill's, *International Geography*, p. 106.

¹¹ Bryce estimates the pure Indians in South America at 8,000,000—9,000,000 (*op. cit.*, p. 459).

in the case of Tasmania a disappearance, of the aborigines. The numbers of the latter were small, 200,000 being, I judge, an outside estimate for the three areas.

To find an offset to this decrease of aborigines in Australia and New Zealand we need go no farther than *Java*. This island increased its population, the great mass of whom have no trace of European blood, from about 4,000,000 in 1800 to about 30,000,000 in 1905. It is less than one third as large as California, contains not one great city, and yet has nearly thirteen times as many inhabitants as this state, or about one third as many as the whole United States. This single case of increase in the aboriginal population of Java under the influence of Europe is enough to outweigh all known decreases in all other parts of the world several times over.

Changes of a similar sort but not so remarkable have been in progress in the *Philippine Islands*. "The earliest complete enumeration of the islands appears to have been . . . made in the year 1591." It showed a population of 667,000 and it is thought that this was, if anything, an exaggeration of the true numbers. "Their ancestors probably did not number more than half a million at the time of the Spanish settlement."¹² There are now about 8,500,000 persons of native stock in the archipelago.

For *India* I have found no evidence upon which to base an opinion whether the people before they came under the political control of European countries were or were not increasing in numbers. But since that time it is certain that the population has greatly multiplied. The first census of India—that of 1872—showed a population of 186,000,000 but this was probably an understatement. The estimated population of 1851 was 178,500,000; that enumerated in 1911 was 244,000,000, an increase of 66,000,000 in 60 years, due in part to annexations of territory, but mainly to increase on the same area.

In *Egypt* a similar change is in progress. The population in 1800 was estimated by the French at 2,460,000. The population in 1907 was counted by the English as nearly 11,000,000, a more than fourfold increase in a century during which Europe little more than doubled its population. After the English took control of the finances of Egypt in 1882 the increase was more than twice as rapid as before that date.

Changes less remarkable but of a similar sort are in progress in

¹² *Census of the Philippine Islands*, 1903, vol. I, p. 411.

Algiers. In that colony, although French, Spaniards, Jews, and Italians constitute large and increasing groups of European population, yet the Mussulman population of native stock increased from 2,850,000 in 1881 to 4,750,000 in 1911, about two thirds in thirty years and double the rate in Europe. A similar change has occurred in the southern end of the same continent about which Mr. Bryce wrote me a few years ago: "A striking illustration of your doctrine is furnished by *South Africa*, where the Kaffir population has enormously increased with the spread of British dominion. It is probably four times as great now between Delagoa Bay and Cape Town as it was in 1808."

The expansion of Europe thus has stimulated more often than retarded the increase of the aboriginal population. This influence has been exercised by the Spaniards in Mexico and the Philippines, by the Dutch in Java, the French in Algiers, the English in India, Egypt, and South Africa, and probably by the Portuguese in Brazil. Colonization by the Belgians, Germans, and Italians is a recent phenomenon. This may explain the lack of evidence for an increase of native races under the rule of these countries. In many cases the tendency of colonizing powers at the start has been to impose a rule so rigid or so unsuited to the conditions as to decimate the native population.

In Mexico, Central and South America, and to a less degree in other parts of the world, this expansion of Europe has resulted in the appearance of other millions of *mixed* blood, of whom Keane reckons in the western hemisphere 12,270,000, Bryce some 19,000,000, and I more than 20,000,000. But the figures are too uncertain to serve as the basis of an argument.

Another aspect of the expansion of Europe should likewise be considered. The Europeans forcibly carried with them to America people from Africa, and the western hemisphere now contains more than 13,000,000 *Negroes*.¹³ North America with the West Indies has about two and one half times as many Negroes as Indians. These Negroes have increased with much greater rapidity than the Negroes in Africa or the Indians in America and almost as fast as the whites in America. If an increase of population be deemed a test of prosperity, then the Negro population of America has prospered in its new home.

¹³ Keane estimates them as 20,000,000, doubtless by assigning to that race several millions of the mixed population of Central and South America, especially Brazil, whom I have included in a different class.

In one instance the expansion of Europe has taken another form, the acceptance by a native people of the main industrial and economic features of European civilization. In the latter half of the nineteenth century the *Japanese* did this and the results upon the increase of the Japanese population have been impressive. Three censuses of Japan are said to have been taken, in 1721, 1726, and 1732, each showing a population of between 26,000,000 and 27,000,000. These results are believed "to be somewhat trustworthy." A century later another census was taken showing a population of 27,200,000, and indicating that for the preceding century the population of Japan has been almost stationary. In 1871, only three years after Japan had been opened to the influence of foreign trade and of modern European institutions, the population was returned at 32,900,000, and in 1914 it was 53,700,000. There are thus two periods, each of 43 years, one just before and the other just after the opening of Japan to influences from Europe. In the later period population increased three times as fast as in the earlier.¹⁴

Limitations of time forbid the further enumeration of instances. But those already given may suffice to show that, as a rule with only minor exceptions, wherever Europe has gone with its out-flowing currents of population, its governmental institutions or its influence, there the population, both European and native, has felt the influence as a stimulus and has increased marvelously.

The evidence indicates also that in China, the one great body of population which has remained to this day almost impermeable to European influence, population has increased little or not at all. The only other region about which it seems well to say a word is the heart of *Africa*.

The estimates for the total population of that continent furnish a noteworthy contrast to those for Europe's. Thus the best authority estimated the inhabitants of Africa in 1882 as 206,000,000, in 1891 as 164,000,000, in 1901 as 177,000,000, and in 1914 as 136,000,000, or a reduction of 70,000,000 in 32 years. During the same period the population of the dependencies fringing Africa and controlled by some European state, such as Egypt, the Barbary states, and South Africa, has rapidly increased, so that the estimates for the independent or semidependent states of the interior must have fallen by more than 70,000,000. Whether this is

¹⁴ Count Yanagisawa, "On the Progress of Statistics in Japan," *Bulletin of International Statistical Institute*, vol. XII, pt. 1, p. 349.

due to an actual decrease of inhabitants or to an increased accuracy in what had been gross overestimates does not appear; but probably both influences have been at work. There is no question but that in Central Africa of recent years there have been terrible losses of life. The Mahdist revolt was most destructive. "About three fifths of the whole population are said to have perished during the ten years from 1882-1892 through wars, famines, epidemics, plundering expeditions and other calamities caused by the Mahdist revolt,"¹⁵ which would mean a loss of 6,000,000. This influence was local but the overland slave trade is not dead and is probably more destructive of life than the maritime slave trade ever was. A majority of the slaves who start on a caravan are said to perish on the road. Yet another check to population almost universal among the native tribes of Central Africa is executions for witchcraft. Miss Kingsley tells us, "The belief in witchcraft is the cause of more African deaths than anything else. It has killed and still kills more men and women than the slave trade."¹⁶

The net result of the inquiry is to show that where the influence of Europe has not been deeply felt, notably in China and Central Africa, population has been nearly or quite stationary or has actually decreased, and that where its influence has been felt at home or abroad among immigrants or natives by way of political domination or by voluntary imitation, there population has rapidly multiplied. The evidence indicates that two centuries ago the population of the earth was not far from one billion, now it is nearly or quite one billion and two thirds. This addition of 650,000,000 to the world's population is the best measure and at the same time the best justification of the expansion of Europe.

A claim more ambitious may be made. This multiplication of mankind, emphasized long ago by Adam Smith, is the only quantitative evidence we have of human progress which can be now applied even crudely to the earth as a whole. May I compare it briefly with two other criteria? Lord Acton said that a compendious test of improvement was to be found in the prolongation of human life. To only a few countries can that test be applied, and of them the United States is not one. If we believe that the average length of human life is greater now than formerly, we believe it because the evidence for certain countries or cities

¹⁵ A. H. Keane in Stanford's *Compendium. Africa*, vol. I, p. 419 (1895).

¹⁶ Mary Kingsley, *Travels in West Africa*, p. 463.

embracing a small minority of the earth's population shows it to be true of them and warrants the extension of the result to the rest of the world. Thus, if we believe that human life is longer than it used to be, we are far from knowing it and have no inkling of how much longer it may be.

Lord Bryce suggests that the amount of human happiness, or the proportion of persons who, at the end of life, would like to go through it again if they could, is a test of progress. But no one can apply this test and to my thought a poor criterion which gives an answer is preferable to one theoretically better, but yielding no result. And the two tests are entirely consistent. In any form of sentient life, happiness is the subjective result of adjustment and unhappiness of maladjustment to environment. In any form of sentient life, also, an increase of the individuals is evidence of adjustment and a decrease is evidence of maladjustment. Both increase of happiness and increase of numbers, then, show a better adaptation to environment, and where numbers have increased we may infer the increase of human happiness.

If this argument is sound, the increase of the earth's population in less than two centuries by about two thirds of a billion persons, is the only quantitative test and proof of the progress of mankind. This evidence is a by-product of national census-taking which originated at the birth of the United States and is now substantially co-extensive with the civilization of Europe.

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